U. S. DEPARTMENT OF AGRICULTURE
Bureau of Entomology & Plant Quarantine

Fort Collins, Colorado,
June 9, 1936.

MEMORANDUM ON INSECT CONDITIONS ON NATIONAL FORESTS IN REGION 4.

During the last week in May and the first week in June 1936, J. A. Beal of the Fort Collins laboratory made an examination of some of the National Forests in Region 4, in company with Messrs. J. W. Farrell and F. C. Koziol of the Regional Office.

Dixie National Forest

The Panguitch Lake area on the Dixie was surveyed in the fall of 1935, and some 700 ponderosa pine trees spotted which were infested with the Black Hills beetle (Dendroctonus ponderosae Hopk.). The present treating work will remove all of these trees by June 15. The infested trees are being felled, bucked into log lengths, and skidded to roadways where they are hauled by truck to a local sawmill, sawed into lumber and all slabs burned. At the present time most of the broods are in the mature larval stage and the time limit set on the destruction of all slabs should be ample to destroy the insects before there is any danger of emergence. The beetle broods are extremely heavy and the occurrence of groups of 30 to 40 trees indicate a potentially serious outbreak. The increase in number of infested trees in 1935 was estimated as about 100 percent or more over the number in 1934. Examination of the area indicated that the spotting and control work, under the direction of E.C.W. Foreman Thomas, is being very well handled. All labor is obtained from the Duck Creek C.C.C. camp.

The nature of this infestation, occurring as it does in large tree with many of them in groups and with brood extremely heavy and vigorous, indicates that the ponderosa pine type (including a little limber pine in the higher country) should be very carefully watched. It is recommended that a thorough survey be made this fall of all of the susceptible areas on the Dixie Forest. The Regional Office plans on arranging for funds for this purpose.

While on the Dixie Forest it was noted that fully half of the Douglas fir had been recently killed by the Douglas fir beetle (Dendroctonus pseudotsugae Hopk.). Groups of 30 or 40 infested trees frequently occur on the north slopes, where the fir is found. The beetles have attacked young and old trees alike, and tree vigor apparently has been no protection. At present the trees contain adult beetles practically ready to emerge. This beetle normally emerges during the spring and it is too late to treat the present infested trees before the beetles fly. If the present epidemic continues for another year it appears that most of the Douglas fir will be killed. This is by far the most aggressive Douglas fir beetle outbreak that I have observed. It is believed that the infestation is too far advanced now to justify a control program. Control work probably should have been started at least two years ago, if it had been possible to foresee the seriousness of this outbreak. Under the present conditions no survey and no control is recommended for the Douglas fir areas.

Wasatch National Forest

Control of the Black Hills beetle in the Provo River area is being rushed in order to clean up some 1,500 infested lodgepole pine during the next two weeks. The control work, by the standing burning method, is

apparently being ably handled by L. J. Farmer, E.C.W. Foreman, using C.C.C. labor and student assistants as crew formen. Smaller infestations were treated last fall on the Grandaddy and the Blacksfork Ranger Districts. It is evident that excellent progress has been made in insect control work on the Wasatch, and it now appears that the outbreak of the Black Hills beetle will be practically cleaned up during this spring's control work. However, in an area where so many infested trees have been treated it is believed that these and adjacent areas in the forest should again be covered by a survey in the fall of 1936, as this is the only way to be sure that the infestation has been controlled effectively. Plans for this survey will soon be submitted by the Regional Office.

American Fork Canyon where some 5,600 white fir trees were treated during the past winter for control of the fir engraver beetle (Scolytus ventralis Lec.) was also visited. This is an extremely difficult area to work because of the rough topography and infested trees containing beetle broods are difficult to locate. The fact that infested trees remain untreated on the higher canyon slopes and on adjacent areas makes the results of this project questionable from an entomological standpoint.

In Mill Creek Canyon, near Salt Lake City, the Agrilus beetle (Agrilus politus Say) infestation in maple was again examined. Last spring some 5,000 infested maples were cut and burned, and more than this number were sprayed during the egg stage with pure kerosene. Strangely enough the kerosene spray did not kill any of the trees. Many trees were cut into where eggs had been deposited on the bark, and in a high percent of the cases the young larvae had died. No new dying trees were observed in the canyon. This infestation appears to be definitely on the decrease, probably as a combined result of control work, increased parasitism, and possibly increased tree vigor.

Also in Mill Creek Canyon two defoliators, the fall canker worm (Alsophila pometaria Harris), and the lime tree winter-moth (Erannis tiliaria Harris) are heavily defoliating boxelder and maple in some spots, especially in some of the camp grounds. A lead arsenate spray on the foliage was recommended for immediate use against these "loopers" to preserve the shade on the camp grounds. The weakening of the maple by defoliation would doubtless also increase the danger of Agrilus attack, and from this standpoint control of the defoliators is also important.

A side trip was made to Fort Douglas to examine defoliated boxelder. The boxelder leaf roller (Cacaecia semiferana Walker) was found to be responsible for the damage. Since pupation had already begun and feeding was decreasing no immediate control was recommended. Apparently the larvae will not appear again until next spring. Control of this insect should be possible either by applying a dormant oil spray to the twigs, branches and bark during early spring before the buds burst, to destroy the overwintering eggs; or by applying a lead arsenate spray to the foliage next spring just after the larvae begin feeding.

Uinta National Forest

Control work on the Uinta was almost completed when this forest was visited, and a few more days would complete the job. About 500 lodgepole pine trees were treated for Black Hills beetle on Tabby Mountain. This is no material decrease from the number of trees treated last year on the same area. On the rest of the forest only 5 to 7 infested trees were being found per section. The Tabby Mountain area is an isolated lodgepole pine stand entirely surround by a pinyon pine type, and is reported as being some 10 miles from other lodgepole. This area should

be surveyed again this fall and an attempt made to clean up this hot spot. The remainder of the Uinta appears to be fairly free from infestation and it is believed that an intensive survey will not be necessary on other areas this fall. A "red top" survey should undoubtedly be made in the summer of 1937 on the Uinta, to determine if groups of infested trees are again appearing.

Ashley National Forest

Control work on the Ashley had been completed and very few trees were found. The infestation of the Black Hills beetle appears to be at a low point. Infested trees were reported as containing very light broods, often in the lower bole only. It appears that it will not be necessary to make an intensive survey of the Ashley this fall, although a general "red top" reconnaissance should be made next summer.

General

Throughout much of Region 4 heavy insect losses are evident in Douglas fir, white fir, and Alpine fir, as a result of outbreaks of Dendroctonus pseudotsugae Hopk., Scolytus ventralis Lec., and Dryocoetes confusus Sw., respectively. The low value of most of this timber and in some cases its scarcity have prevented the institution of control. It is believed that the aggressive nature of these insects has made them sufficiently important to warrant considerable attention, and it is recommended that as soon as men and money are available a study be made of the life history and habits of the little known species. With this information we can better cope with such emergencies as now exist in these less valuable forest cover types.

J. A. Beal,
Entomologist.
Forest Insect Investigations.

cc - Dr. Craighead
Region 4 office